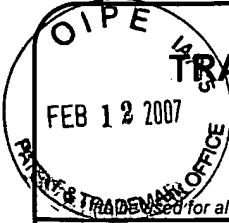


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 <b>TRANSMITTAL FORM</b> (To be used for all correspondence after initial filing)	Application Number	10/647,971
	Filing Date	08/25/2003
	First Named Inventor	NAIR
	Art Unit	3737
	Examiner Name	Francis J. Jaworski
Total Number of Pages in This Submission	Attorney Docket Number	895,675-007

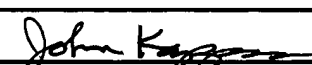
**ENCLOSURES** (Check all that apply)

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input type="checkbox"/> Other Enclosure(s) (please identify below):<br>- Request for Corrected Patent, Or In the Alternative, For Certificate of Correction of Patent for Office Mistake... (w/two copies of PTO-1050 and Exhibits A-C)<br>- Receipt verification postcard |
|---|--|---|

Remarks

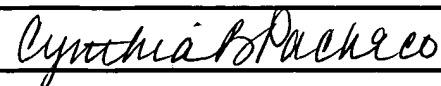
**Certificate**  
**FEB 15 2007**  
**of Correction**

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	O'MELVENY & MYERS LLP		
Signature			
Printed name	John Kappos		
Date	February 7, 2007	Reg. No.	37,861

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

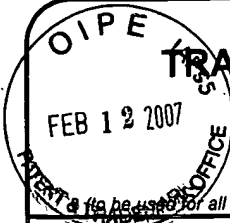
Signature			<b>FEB 20 2007</b>
Typed or printed name	Cynthia B. Pacheco	Date	February 8, 2007

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

 American LegalNet, Inc.  
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 <p><b>TRANSMITTAL FORM</b></p> <p><small>Not to be used for all correspondence after initial filing)</small></p>	Application Number	10/647,971
	Filing Date	08/25/2003
	First Named Inventor	NAIR
	Art Unit	3737
	Examiner Name	Francis J. Jaworski
	Attorney Docket Number	895,675-007
Total Number of Pages in This Submission		


**ENCLOSURES** (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below): - Request for Corrected Patent, Or In the Alternative, For Certificate of Correction of Patent for Office Mistake... (w/two copies of PTO-1050 and Exhibits A-C) - Receipt verification postcard
<div style="border: 1px solid black; padding: 5px; min-height: 100px;"> <b>Remarks</b> </div>		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	O'MELVENY & MYERS LLP		
Signature			
Printed name	John Kappos		
Date	February 7, 2007	Reg. No.	37,861

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature			
Typed or printed name	Cynthia B. Pacheco	Date	February 8, 2007

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEB 20 2007



PATENT  
895675-7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: NAIR et al.

Patent No.: 7,074,188

Issued: July 11, 2006

Title: SYSTEM AND METHOD OF  
CHARACTERIZING VASCULAR TISSUE

Art Unit: 3737

Examiner: Francis Jaworski

REQUEST FOR CORRECTED PATENT, OR IN THE ALTERNATIVE, FOR  
CERTIFICATE OF CORRECTION OF PATENT FOR OFFICE MISTAKE  
(37 C.F.R. § 1.322) AND APPLICANTS MISTAKE (37 C.F.R. § 1.323)

Attn: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

1. The Applicants of U.S. Patent No. 7,074,188 have identified a number of typographical errors in the claims of the '188 Patent that occurred through the fault of the Patent and Trademark Office. Given the number and the severity of the typographical errors, and pursuant to 37 C.F.R. § 1.322(b), the Applicants and the Assignee of the '188 Patent respectfully request the Director to issue a Corrected Patent. In the alternative, a Certificate of Correction is respectfully requested. The specific nature of the typographical errors are more fully described below.

CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

February 8, 2007  
Date of Deposit  
LA2:814921.2

*Cynthia B. Pacheco*  
Cynthia B. Pacheco

FEB 20 2007

FEB 20 2007

2. Attached hereto, in duplicate, is Form PTO-1050, with at least one copy being suitable for printing.
3. On February 8, 2006, Examiner Jaworski issued a Notice of Allowability, which included an Examiner's amendment. See Exhibit A, attached hereto. On February 15, 2006, the Applicants filed an Amendment After Allowance, pointing out that the Examiner, in the Examiner's Amendment, inadvertently transposed the term "further" in Claim 22 (issued Claim 1), placing it before the term "landmark" instead of after. See Exhibit B, attached hereto. Accordingly, the Applicants amended Claim 22 to read "said step of identifying at least one [further] landmark further comprising ..." On May 4, 2006, the Examiner issued a Response to Rule 312 Communication, indicating that the Amendment After Final would be entered. See Exhibit C, attached hereto.
4. Upon issuance of the '188 Patent, however, the Applicants noticed that Claim 1 (original Claim 22) now includes **both** the incorrect limitation ("said step of identifying at least one *further landmark comprising* applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image") as well as the correct limitation ("said step of identifying at least one *landmark further comprising* applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image").
5. The Applicants also noticed that Claim 11 (original Claim 33) now includes the phrase "said characterization application being further adapted to use a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image" **twice**.

6. The Applicants further noticed that Claims 17 and 18 (original Claims 38 and 39, respectively) now include the terms "vascular-tissue-charecterization" and "vascular-tissue-characterizatiOn," instead of the term "vascular-tissue-characterization," as originally provided.

7. A cursory review of the allowed claims (see Exhibit B) shows that these typographical errors occurred through the fault of the Patent and Trademark Office. Given the number and the severity of the typographical errors, and pursuant to 37 C.F.R. § 1.322(b), the Applicants and the Assignee of the '188 Patent respectfully request the Director to issue a Corrected Patent.

8. Upon further review of the '188 Patent, the Applicants also noticed inadvertent typographical errors that occurred through the fault of the Applicants. Specifically, Claim 16 (original Claim 37) should have depended from Claim 12, not Claim 15.

9. The typographical errors identified in Paragraph 8 were made inadvertently and occurred in good faith. Correction of these errors by way of the aforementioned Corrected Patent is respectfully requested.

10. Please send the Corrected Patent, or in the alternative the Certificate of Correction to:

---

John Kappos, Esq.  
O'MELVENY & MYERS LLP  
610 Newport Center Drive, 17<sup>th</sup> Floor  
Newport Beach, California 92660-6429


11. While the Applicants believe that no fees are due in connection with the filing of this paper, the Commissioner is authorized to charge any shortage in the fees, including extension of time fees, to Deposit Account No. 50-2862.

FEB 20 2007

13. A duplicate of this paper is attached

Respectfully submitted,

Date: February 7, 2007

  
\_\_\_\_\_  
John Kappos  
Attorney for Applicants and Assignee  
Registration No. 37,861

**O'MELVENY & MYERS LLP**  
610 Newport Center Drive, 17th Floor  
Newport Beach, CA 92660-6429  
Telephone: 949-760-9600

Enclosures:

- (1) Certificate of Correction (duplicate)
- (2) Copy of Patent Certificate No. 7,074,188

FEB 20 2007

6

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/647,971	NAIR ET AL	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-**  
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview 1/25-26/06.
2. ☒ The allowed claim(s) is/are 22-24, 26-43 and 45.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

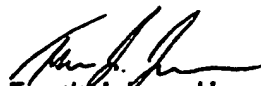
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets" ) must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948 ) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                 | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>012606</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                       |
|   | 9. <input type="checkbox"/> Other _____  |

  
Francis J. Jaworski  
Primary Examiner

11/20/2007

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Todd Fitzsimmons, Reg. No. 44,683 on January 25, 26 2006.

The application has been amended as follows:

Claims 1 – 21, 46 – 48 have been cancelled.

Claim 22 has been amended by insertion after " said second image " in line 13, – said step of identifying at least one further landmark comprising applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image –.

Claim 25 has been cancelled.

Claim 26 dependency has been changed from " 25 " to – 22 –.

Claim 33 has been amended by the insertion at end-claim – said characterization application being further adapted to use a morphometric

FEB 20 2007



Art Unit: 3737

algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image -- ;

Claim 44 has been cancelled.

Dependency of claim 45 has been changed from " 44 " to -- 33 --.

The following is an examiner's statement of reasons for allowance:

The term ' characterization application ' in context is understood to pertain to one or more compositing applications resident in the computing device and electrically connected to the database therein, where the computing device may include a remote portion in which a part or whole of the characterization application is resident as per the above definition, see also specification page 7 definition.

---

Vince et al (US6,200,268) is directed inter alia to a warping or de-ovalizing scaling process to undo the effects of cross-sectional collapse during histologic sectioning. Thereafter the histologic image is matched to the IVUS-derived image by manual operator selection of Cartesian coordinates on the one

FEB 20 2007


image with machine selection of the corresponding Cartesian coordinate on the companion image, per Fig. 5, with attendant inaccuracies to this process, and therefore a morphometric algorithm which aligns anatomic landmarks between the image types as called for in the vascular characterizing method and as resident in the computing device and electrically connected to the database portion of the analogous system could not be used under this prior regime.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738

FJJ:fjj

01272006

  
Francis J. Jaworski  
Primary Examiner

FEB 20 2007



PATENT  
895675-7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: NAIR et al.

Serial No.: 10/647,971

Filed: August 25, 2003

Title: SYSTEM AND METHOD OF  
CHARACTERIZING VASCULAR TISSUE

Art Unit: 3737

Examiner: Francis Jaworski

AMENDMENT AFTER ALLOWANCE

Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Allowability dated February 8, 2006, please amend the above-identified application as follows:

CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

February 15, 2006  
Date of Deposit  
LA2:790773.2

*Cynthia B. Pacheco*  
Cynthia B. Pacheco

FEB 20 2006

**IN THE CLAIMS:**

The following listing of claims will replace all prior versions, and listings, of the claims in the application:

1-21. (Canceled)

22. (Currently amended) A method of characterizing vascular tissue, comprising;

collecting RF backscatter data from a portion of a vascular object;

using at least said RF backscatter data to construct a first image of said portion of said vascular object;

preparing a histology of said portion of said vascular object;

using said histology to construct a second image of said portion of said vascular object;

characterizing at least a portion of said histology;

identifying a region of interest (ROI) of said second image, said ROI corresponding to said at least a portion of said histology;

identifying at least one landmark common to said first and second images and using said at least one landmark to identify a region of said first image that substantially corresponds to said ROI of said second image, said step of identifying at least one ~~further~~ landmark further comprising applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image;

identifying a portion of said RF backscatter data corresponding to said region of said first image;

identifying at least one parameter of said RF backscatter data; and

storing said at least one parameter and said characterization of said at least a portion of said histology.

23. (Original) The method of Claim 22, wherein said step of identifying at least one parameter further comprises performing a frequency transformation on said portion of said RF backscatter data before said at least one parameter is identified.

24. (Original) The method of Claim 22, wherein said step of identifying at least one parameter further comprises performing a wavelet transformation on said portion of said RF backscatter data before said at least one parameter is identified.

25. (Canceled).

26. (Previously presented) The method of Claim 22, wherein said step of identifying at least one landmark further comprises aligning the non-landmark portions of said first and second images based on a thin plate algorithm.

27. (Original) The method of Claim 22, wherein said step of characterizing at least a portion of said histology further comprises identifying a tissue type, said tissue type being selected from a group consisting of fibrous tissues, fibro-lipidic tissues, calcified necrotic tissues, and calcific tissues.

28. (Original) The method of Claim 23, wherein said step of performing a frequency transformation further comprises using a fast Fourier transform (FFT).

29. (Original) The method of Claim 23, wherein said step of performing a frequency transformation further comprises using the Welch periodogram

30. (Original) The method of Claim 23, wherein said step of performing a frequency transformation further comprises using autoregressive power spectrum (AR) analysis.

31. (Original) The method of Claim 22, wherein said step of identifying at least one parameter further comprises identifying said at least one parameter from a group consisting of maximum power, minimum power, frequency at maximum power, frequency at minimum power, y intercept, slope, mid-band fit, and integrated backscatter.

32. (Original) The method of Claim 22, further comprising:

collecting a second set of RF backscatter data from a second vascular object;

performing a frequency transformation on at least a portion of said second set of RF backscatter data to produce a third set of data;

identifying at least another parameter from a third set of data; and

using said at least another parameter, said at least one parameter and said characterization of said at least a portion of said histology to characterize at least a portion of said second vascular object.

33. (Previously presented) A vascular-tissue-characterization system, comprising:

a computing device comprising:

a database; and

a characterization application electrically connected to said database and adapted to:

receive intra-vascular ultrasound (IVUS) data corresponding to a portion of a vascular object and digitized data corresponding to a histology of said portion of said vascular object;

use at least said IVUS data and said digitized data to construct a first and second image, respectively, of said portion of said vascular object;

receive characterization data corresponding to a region of interest (ROI) of said second image;

use at least one landmark to morph said second image to substantially match said first image and to identify said ROI on said first image;

identify a portion of said IVUS data corresponding to said ROI on said first image;

identify at least one parameter related to said portion of said IVUS data; and

store said at least one parameter and said characterization data in said database, said characterization application being further adapted to use a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image.

34. (Original) The vascular-tissue-characterization system of Claim 33, wherein said characterization application is further adapted to perform a spectral analysis on said IVUS data before said at least one parameter is identified.

35. (Original) The vascular-tissue-characterization system of Claim 34, wherein said characterization application is further adapted to perform a fast Fourier transform (FFT).

36. (Original) The vascular-tissue-characterization system of Claim 34, wherein said characterization application is further adapted to perform the Welch periodogram.

37. (Original) The vascular-tissue-characterization system of Claim 35, wherein said characterization application is further adapted to perform autoregressive power spectrum (AR) analysis.

38. (Original) The vascular-tissue-characterization system of Claim 33, wherein said at least one parameters is selected from a group consisting of maximum power, minimum power, frequency at maximum power, frequency at minimum power, y intercept, slope, mid-band fit, and integrated backscatter.

39. (Original) The vascular-tissue-characterization system of Claim 33, wherein said characterization data comprises a tissue type, said tissue type being selected from a group consisting of fibrous tissues, fibro-lipidic tissues, calcified necrotic tissues, and calcific tissues.



40. (Original) The vascular-tissue-characterization system of Claim 34, wherein said characterization application is further adapted to analyze said IVUS data to identify at least one location corresponding to said at least one parameter.

41. (Original) The vascular-tissue-characterization system of Claim 33, further comprising an input device electrically connected to said computing device, said characterization data being provided by said input device.

42. (Original) The vascular-tissue-characterization system of Claim 33, further comprising an IVUS console adapted to:

acquire said IVUS data from said vascular object; and  
provide said IVUS data to said computing device.

43. (Original) The vascular-tissue-characterization system of Claim 42, further comprising an IVUS catheter having at least one transducer, said IVUS catheter being electrically connected to said IVUS console and adapted to acquire said IVUS data from said vascular object.

44. (Canceled).

45. (Previously presented) The vascular-tissue-characterization system of Claim 33, wherein said characterization application is further adapted to align the non-landmark portions of said first and second images based on a thin plate algorithm.

REMARKS

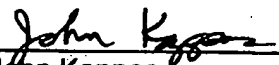
Claims 22-24, 26-43 and 45 remain in this application, with Claim 22 amended and Claims 1-21, 25, 44 and 46-49 canceled. The Applicants would like to thank the Examiner for conducting a telephonic interview on January 26, 2006 with Applicants' counsel, and for filing an Examiner's Amendment and issuing a Notice of Allowability on Claims 22-24, 26-43 and 45, both of which were mailed on February 8, 2006.

The Examiner's Amendment, in incorporating dependent Claim 25 into independent Claim 22, inadvertently transposed the term "further," placing it before the term "landmark" instead of after (see original Claim 25 "said step of identifying at least one landmark further comprising ..."). Accordingly, the Applicants have amended Claim 22 to properly incorporate dependent Claim 25.

In view of the foregoing, the Applicants respectfully submit that Claims 22-24, 26-43 and 45 are in condition for allowance. While the Applicants believe that no fees are due in connection with the filing of this paper, the Commissioner is authorized to charge any shortage in the fees, including extension of time fees, to Deposit Account No. 50-2862.

Respectfully submitted,

Date: February 15, 2006

  
\_\_\_\_\_  
John Kappos  
Attorney for Applicants  
Registration No. 37,861

**O'MELVENY & MYERS LLP**  
610 Newport Center Drive, 17th Floor  
Newport Beach, CA 92660-6429  
Telephone: 949-760-9600

FEB 20 2007



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,971	08/25/2003	Anuja Nair	895,675-007	2843
34263	7590	05/04/2006	EXAMINER	
O'MELVENY & MYERS LLP 610 NEWPORT CENTER DRIVE 17TH FLOOR NEWPORT BEACH, CA 92660			JAWORSKI, FRANCIS J	
			ART UNIT	PAPER NUMBER
			3737	

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

CFR 20 2004

<b>Response to Rule 312 Communication</b>	Application No.	Applicant(s)	
	10/647,971	NAIR ET AL.	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☒ The amendment filed on 17 February 2006 under 37 CFR 1.312 has been considered, and has been:

a) ☐ entered.


b) ☒ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

  
 Francis J. Jaworski  
 Primary Examiner

*encl: IDS 2-6-06 2 sheets*

FEB 20 2007



PATENT  
895675-7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: NAIR et al.

Serial No.: 10/647,971

Filed: August 25, 2003

Title: SYSTEM AND METHOD OF  
CHARACTERIZING VASCULAR TISSUE

Art Unit: 3737

Examiner: Francis Jaworski

AMENDMENT AFTER ALLOWANCE

Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Allowability dated February 8, 2006, please amend  
the above-identified application as follows:

*Enter  
Rule 312  
amdt  
3-15-06*

CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

February 15, 2006  
Date of Deposit  
LA2:790773.2

*Cynthia B. Pacheco*  
Cynthia B. Pacheco

FEB 20 2006



PATENT  
895675-7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: NAIR et al.

Patent No.: 7,074,188

Issued: July 11, 2006

Title: SYSTEM AND METHOD OF  
CHARACTERIZING VASCULAR TISSUE

Art Unit: 3737

Examiner: Francis Jaworski

REQUEST FOR CORRECTED PATENT, OR IN THE ALTERNATIVE, FOR  
CERTIFICATE OF CORRECTION OF PATENT FOR OFFICE MISTAKE  
(37 C.F.R. § 1.322) AND APPLICANTS MISTAKE (37 C.F.R. § 1.323)

Attn: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

1. The Applicants of U.S. Patent No. 7,074,188 have identified a number of typographical errors in the claims of the '188 Patent that occurred through the fault of the Patent and Trademark Office. Given the number and the severity of the typographical errors, and pursuant to 37 C.F.R. § 1.322(b), the Applicants and the Assignee of the '188 Patent respectfully request the Director to issue a Corrected Patent. In the alternative, a Certificate of Correction is respectfully requested. The specific nature of the typographical errors are more fully described below.

CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

February 8, 2007  
Date of Deposit  
LA2:814921.2

*Cynthia B. Pacheco*  
Cynthia B. Pacheco

FEB 20 2007

2. Attached hereto, in duplicate, is Form PTO-1050, with at least one copy being suitable for printing.
3. On February 8, 2006, Examiner Jaworski issued a Notice of Allowability, which included an Examiner's amendment. See Exhibit A, attached hereto. On February 15, 2006, the Applicants filed an Amendment After Allowance, pointing out that the Examiner, in the Examiner's Amendment, inadvertently transposed the term "further" in Claim 22 (issued Claim 1), placing it before the term "landmark" instead of after. See Exhibit B, attached hereto. Accordingly, the Applicants amended Claim 22 to read "said step of identifying at least one [further] landmark further comprising ..." On May 4, 2006, the Examiner issued a Response to Rule 312 Communication, indicating that the Amendment After Final would be entered. See Exhibit C, attached hereto.
4. Upon issuance of the '188 Patent, however, the Applicants noticed that Claim 1 (original Claim 22) now includes **both** the incorrect limitation ("said step of identifying at least one *further landmark comprising* applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image") as well as the correct limitation ("said step of identifying at least one *landmark further comprising* applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image").
5. The Applicants also noticed that Claim 11 (original Claim 33) now includes the phrase "said characterization application being further adapted to use a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image" **twice**.

6. The Applicants further noticed that Claims 17 and 18 (original Claims 38 and 39, respectively) now include the terms "vascular-tissue-charecterization" and "vascular-tissue-characterizatiOn," instead of the term "vascular-tissue-characterization," as originally provided.

7. A cursory review of the allowed claims (see Exhibit B) shows that these typographical errors occurred through the fault of the Patent and Trademark Office. Given the number and the severity of the typographical errors, and pursuant to 37 C.F.R. § 1.322(b), the Applicants and the Assignee of the '188 Patent respectfully request the Director to issue a Corrected Patent.

8. Upon further review of the '188 Patent, the Applicants also noticed inadvertent typographical errors that occurred through the fault of the Applicants. Specifically, Claim 16 (original Claim 37) should have depended from Claim 12, not Claim 15.

9. The typographical errors identified in Paragraph 8 were made inadvertently and occurred in good faith. Correction of these errors by way of the aforementioned Corrected Patent is respectfully requested.

10. Please send the Corrected Patent, or in the alternative the Certificate of Correction to:

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John Kappos, Esq.  
O'MELVENY & MYERS LLP  
610 Newport Center Drive, 17<sup>th</sup> Floor  
Newport Beach, California 92660-6429

11. While the Applicants believe that no fees are due in connection with the filing of this paper, the Commissioner is authorized to charge any shortage in the fees, including extension of time fees, to Deposit Account No. 50-2862.

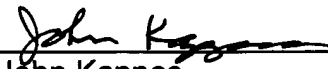


Patent No. 7,074,188  
Page 4

13. A duplicate of this paper is attached

Respectfully submitted,

Date: February 7, 2007

  
\_\_\_\_\_  
John Kappos  
Attorney for Applicants and Assignee  
Registration No. 37,861

**O'MELVENY & MYERS LLP**  
610 Newport Center Drive, 17th Floor  
Newport Beach, CA 92660-6429  
Telephone: 949-760-9600

Enclosures:

- (1) Certificate of Correction (duplicate)
- (2) Copy of Patent Certificate No. 7,074,188

FEB 20 2007

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO. : 7,074,188

APPLICATION NO.: 10/647,971

ISSUE DATE : July 11, 2006

INVENTOR(S) : NAIR et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On page 11, col. 8, lines 58-62 (Claim 1), "said step of identifying at least one further landmark comprising applying a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image" should be deleted.

On page 12, col. 10, lines 14-18 (Claim 11), "said charecterization application being further adapted to use a morphometric algorithm to align the at least one landmark of said second image to substantially match the at least one landmark of said first image" should be deleted.

On page 12, col. 10, lines 33-34 (Claim 16), "claim 15" should be changed to -- claim 12 --.

On page 12, col. 10, line 37 (Claim 17), "vascular-tissue-charecterization" should be changed to -- vascular-tissue-characterization --.

On page 12, col. 10, line 43 (Claim 18), "vascular-tissue-characterizatiOn" should be changed to -- vascular-tissue-characterization --.

**MAILING ADDRESS OF SENDER (Please do not use customer number below):**

John Kappos, Esq., O'Melveny & Myers LLP  
610 Newport Center Drive, 17th Floor  
Newport Beach, California 92660-6429

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

3 2 0 2007

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**Page 1 of 1

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*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

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